

Sapphire Viewports for a Venus Probe, Phase I

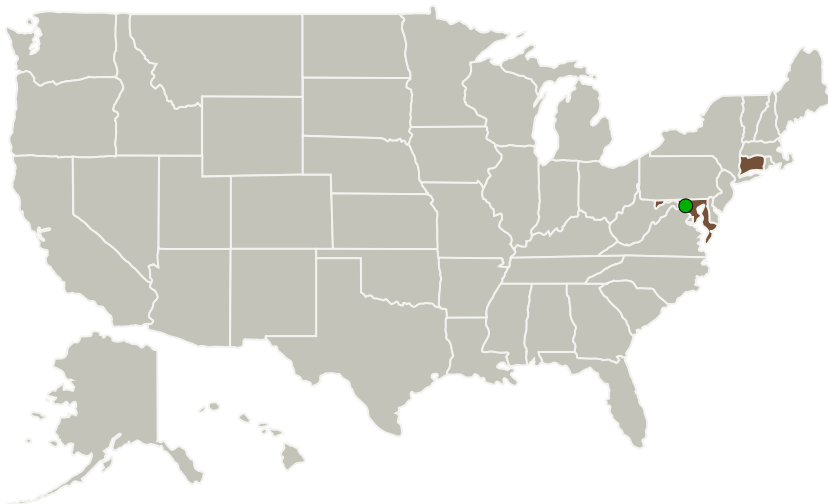
Completed Technology Project (2010 - 2010)




Project Introduction

The proposed Phase 1 program will demonstrate that sapphire viewports are feasible for use in Venus probes. TvU's commercial viewport products have demonstrated that the pressure and temperature constraints will be met, while the use of materials appropriate to the atmospheric conditions will satisfy the overall physical constraints. The viewport system will be shown to be adaptable to overall NASA use constraints. A prototype viewport system will be designed for fabrication and testing, and application in Phase 2. Task work will detail the design of both the window and the fixture, test a sample, and emphasize the most important aspects of the design and specification. Phase 1 work will lay out the foundation for a Phase 2 program that will integrate these viewports into the NASA Venus probe program.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Thoughtventions Unlimited	Lead Organization	Industry	Glastonbury, Connecticut
 Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland



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Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Project Transitions	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	3
Target Destinations	3

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Primary U.S. Work Locations

Connecticut

Maryland

Project Transitions

 **January 2010:** Project Start

 **July 2010:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/139426>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Thoughtventions Unlimited

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

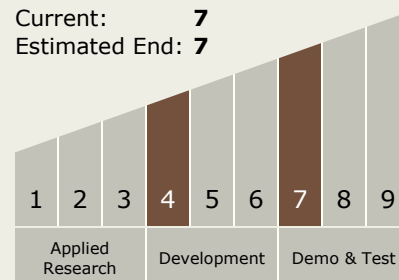
Carlos Torrez

Principal Investigator:

Stephen C Bates

Technology Maturity (TRL)

Start: 4
Current: 7
Estimated End: 7



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Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.3 In-Situ Instruments and Sensors
 - └ TX08.3.6 Extreme Environments Related to Critical System Health Management

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System